ABSTRACT OF THE DISCLOSURE

An ionically conductive polymeric composition for coating a hot can defibrillator electrode is disclosed. A polymeric coating, such as polyethylene oxide containing NaCl or a similar ionic medium, coats and fills the pores of a high surface area electrode to provide a continuous ionic network from the can to the adjacent body tissue. In certain embodiments, the underlying high surface area, porous electrode is made by chemically etching a smooth electrode surface, such as that of a conventional titanium housing, followed by applying a thin coating of a noble metal such as platinum. In other embodiments, a noble metal or an oxide thereof, such as platinum black or iridium oxide, is applied to a titanium housing to form a porous, high surface area electrode. The conductive polymeric coating is then applied over the porous noble metal or metal oxide. The electrically conductive polymeric material is biocompatible, chemically and mechanically stable and does not dissolve or leach out over the useful lifetime of the defibrillator. A hot can defibrillator employing the new polymeric coating avoids development of high polarization at the can/tissue interface and maintains a more uniform defibrillation threshold than conventional implantable defibrillators, thus increasing the feasibility of pectoral implantation, particularly in a "dry pocket" environment.